

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,171,385 B1
APPLICATION NO. : 09/718500
DATED : January 30, 2007
INVENTOR(S) : Ron S. Dembo and Helmut Mausser

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 6, lines 35, 52, and 59 replace: "MtP" with --MtF--

In Column 11, line 29 replace: "MtP" with --MtF--

In Column 11, line 31 replace: "portfolio Liquidity" with --portfolio. Liquidity--

In Column 12, line 4 replace: "qi,qi" with --qi, qi--

In Column 13, line 10 replace: " $(x_a - x_b) \leq x_1 0$ " with -- $(x_a - x_b) \leq x_1 \leq 0$ --

In Column 13, line 32 replace: " x_{i+j} " with -- x_{i+1} --

In Column 13, line 49 replace: " $\text{maximize}_{(x, u, d)} p^T u$ " with -- $\text{maximize}_{(x, u, d)} p^T u$ --

In Column 13, line 52 replace: " $u - d - (M - rq^T)x = 0 \ (\pi)$ " with -- $u - d - (M - rq^T)x = 0 \ (\pi)$ --

In Column 13, line 53 replace: " $-x \leq -x_L \ (\alpha_L)$ " with -- $-x \leq -x_L \ (\omega_L)$ --

In Column 13, line 54 replace: " $x \leq x_U \ (\alpha_U)$ " with -- $x \leq x_U \ (\omega_U)$ --

In Column 16, line 41 replace: " $\text{minimize}_{(\mu, \pi, \alpha_L, \alpha_U)} k\mu - (x_L)^T \alpha_L + (x_U)^T \alpha_U$ " with -- $\text{minimize}_{(\mu, \pi, \omega_L, \omega_U)} k\mu - (x_L)^T \omega_L + (x_U)^T \omega_U$ --

In Column 16, line 43 replace: " $\alpha_L \cdot \alpha_U + (M^T - qr^T)\pi = 0$ " with -- $\omega_L - \omega_U + (M^T - qr^T)\pi = 0$ --

In Column 16, line 44 replace: " $p\mu - \pi \leq 0$ " with -- $p\mu - \pi \geq 0$ --

In Column 16, line 45 replace: " $\pi \leq p$ " with -- $\pi \geq p$ --

In Column 16, line 46 replace: " $\mu, =_L / \alpha_U \leq 0$ " with -- $\mu, \omega_L, \omega_U \geq 0$ --

In Column 16, line 49 replace: " $\lambda_j = p_j$ " with -- $\pi_j = p_j$ --

In Column 17, line 10 replace: " $(\omega_L)_i - (\omega_U)_i + \sum_{j=1}^s (M_{ji} - q_j r_j) \pi_j = 0$ " with -- $(\omega_L)_i - (\omega_U)_i + \sum_{j=1}^s (M_{ji} - q_j r_j) \pi_j = 0$ --

In Column 17, line 39 replace: " $f = \sum_{i=1}^s \pi_j$ " with -- $f = \sum_{j=1}^s \pi_j$ --

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In Column 17, line 45 replace: “ $\frac{(\omega_L)_i}{f} - \frac{(\omega_U)_i}{f} + \sum_{i=1}^s (M_{ji} - q_i r_j) \rho_j = 0$ ” with
 -- $\frac{(\omega_L)_i}{f} - \frac{(\omega_U)_i}{f} + \sum_{j=1}^s (M_{ji} - q_i r_j) \rho_j = 0$ --

In Column 17, line 55 replace: “ $E_P(V_{(i)}) = \sum_{i=1}^s (M_{ji} - q_i r_j) \rho_j$ ” with
 -- $E_P(V_{(i)}) = \sum_{j=1}^s (M_{ji} - q_i r_j) \rho_j$ --

In Column 19 line 15 replace: “over p” with --over ρ --

In Column 19, line 21 replace: “investor.” with --investor)--

In Column 19, line 34 replace: “ $r \rho^T u - r \rho^T d = r \rho^T (M - r q^T) x$ ” with
 -- $r \rho^T u - r \rho^T d = r \rho^T (M - r q^T) x$ --

In Column 19, line 38 replace: “ $\pi^T (u - d - (M - r q^T) x) = 0$ ” with
 -- $\pi^T (u - d - (M - r q^T) x) = 0$ --

In Column 19, line 39 replace: “replace $M_{(i)}$ ” with -- $M_{(i)}$ --

In Column 20, line 66 replace: “It can b shown” with --It can be shown--

In Column 21, line 17 replace: “ $(M^T - q r^T) \pi + \omega_U - \omega_L = 0$ ” with
 -- $(M^T - q r^T) \pi + \omega_U - \omega_L = 0$ --

In Column 22, line 15 replace: “maximize (x,u,d)p^Tu” with --maximize_(x,u,d)p^Tu--

In Claim 13, line 51 replace: “maximize (x,u,d)p^Td” with --minimize_(x,u,d)p^Td--

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In Claim 13 line 53 replace: " $p^T d \leq k$ " with $--p^T u \geq k--$

Signed and Sealed this

Twenty-second Day of May, 2007

A handwritten signature in black ink, appearing to read "Jon W. Dudas". The signature is stylized with a large, looping initial "J" and a distinct "D".

JON W. DUDAS
Director of the United States Patent and Trademark Office